

Thursday, 11/16/2006 4:24:30 PM

User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: SKID TUBE ASSEMBLY
Job Number	: 29472		
Estimate Number	: 10023		
P.O. Number	: <i>N/A</i>	Part Number	: D205634041
This Issue	: 11/16/2006 S.O. No. : <i>N/A</i>	Drawing Number	: D2580 REV C
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: <i>N/A</i> Type : LANDING GEAR	Drawing Revision	: C
Previous Run	: 29471A	Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 12/10/2006 Qty: 1 Um: Each
Checked & Approved By	: <i>[Signature]</i>		
Comment	: Est Rev: N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ Est Rev. O 06.02.28 Added paperwork EC		

Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy D205-634 bluefile & type labels per PPP D205-634 CHG001

KJ 06.11.20

2.0 D25001190 Ext'n -1" Beam Tube 4"



Comment: Qty.: 1.0400 Each(s)/Unit Total : 1.0400 Each(s)

Pick:

Qty Part Number Description Batch

1 D2500-1-190

Skid Tube Extrusion

*B25858**m-A 06/11/27*

3.0 D2596 205 Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2596

205 Web

*B29604**m-A 06/11/27*

4.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1- Inspect mat'l D2500-1-190 for damage

m 06.11.27

2-Cut D2500-1-190 per Dwg D2580 if necessary Deburr ends

m 06.11.27

3-Drill pilot holes using drill jig DT 8149

m 06.11.27

4-Acid etch and Alodine tube per QSI 005 4.1

m-h 06/11/27

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Drawing Name: SKID TUBE ASSEMBLY

Job Number: 29472

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5-Open holes to 0.500" as per Dwg D2580 without cutting fluid *pm 06-11-27 ①*

6-Countersink holes as per Dwg D2580 without cutting fluid *pm 06-11-27 ①*

7-Deburr and blow out all chips from inside of tube *pm 06-11-27 ①*

8-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 *M1102660*

Sikaflex expire date: *07-02-01*

Start Time: *4:00pm* Date: *06/11/27*

Fin Time: *9:20pm* Date: *06-11-29*

m-b 06/11/27 ①

5.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

1-Bend as per program D2580.C on CNC Bender and Folio FT009

2-Cut tubes as per Dwg. D2580

> DP 6-11-29

6.0

LANDING GEAR

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Deburr ends after cutting. Remove alodine from around holes

pm JB 6/12/04 ①

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

BF 06-12-04

8.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2576-3

Step

B-23060

BF 06-12-04

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Drawing Name: SKID TUBE ASSEMBLY

Job Number: 29472

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

D2579

Crossbolt Spacer



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty

Part Number

Description

Batch

20

D2579

Spacers

B29489 BE

06-12-04

10.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Prepare tube for welding D2576-3 StepRemove alodine as required.

BE 06-12-04

2-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R

Aluminum Rod

M101446

BE 06-12-04

3-Weld crossbolt spacers D2579 as per Dwg. D2580 and QSI 004. For D2579

spacers, weld one

side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R

Aluminum Rod

M101655

BE 06-12-04

4-Grind welds as per Dwg D2580 Grind flush ridge made from bending

Pm 06-12-50

5-Drill holes for wearplates using DT 8217Open holes to 19/64", adjust stopper not to hit web. Deburr

Pm 06-12-50

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Deburr holes

Pm 06-12-50

7-Drill pilot holes for aft cap using DT 8215Open holes to #6 Drill bit. Deburr

Pm 06-12-50

8-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr

Pm 06-12-50

11.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

100/12/05 (1)

12.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

106/12/05 (1)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Job Number: 29472

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



M102391



Comment: HAND FINISHING RESOURCE #1

Powder Coat White (Ref: 4.3.5.2) as per QSI 005 4.3

Y/R 06/12/06

X1

14.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

15.0

D25771

Wearplate Fwd



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-1	Wearplate	28063

16.0

D25773

Wearplate Aft



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-3	Wearplate	28013

17.0

D25775

Wearplate, Centre



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2577-5	Wearplate	28122

18.0

ALS71032130

Insert



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	ALS7-1032-130	Inserts	18964

Y/R 06/12/11

W/O:		WORK ORDER CHANGES						
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Date: Thursday, 11/16/2006 4:24:31 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 29472

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AN960JD10L

Washer



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
4 4	AN960JD10L	Washer	102217

20.0

AN34A

Bolt



Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
44	AN3-4A	Bolt	102832

21.0

D25941

Plug



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

plug

Batch: 28014

22.0

D25943

O-Ring



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

o-ring

Batch: 19101124 27168

23.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch: 2855 26351

24.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: 10283 15205

4/ 06/12/11

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: LD Date: 8/12/15
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 29472

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description:

25.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Washer

Batch: 102217

YJ 06/12/11

26.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291

Sikaflex expire date: 02/07

102660

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

A/R Sikaflex-291

Sikaflex expire date: 02/07

102660

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

M102635

Batch:

06/12/13 (1)

27.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

28.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-634-041

Location:

PPP Rev: B

06/12/14 (1)

29.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

06/12/15 (1)

06/12/15

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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W/O:		WORK ORDER CHANGES						
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NOTE: Date & initial all entries



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. C SHEET 1 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY SCALE NTS	
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	

RELEASED
98/09/17 DS

QTY	Part Number	Description
X	D2580-041	SKIDTUBE ASSEMBLY
*	D2500-1	EXTRUSION
1	D2596	205 WEB
1	D2575	AFT CAP
1	D2576 - 3	STEP
20	D2579	CROSS BOLT SPACER
16	D2594-1	PLUG
16	D2594-3	O-RING
1	D2577-1	WEARSHOE
1	D2577-3	WEARSHOE
1	D2577-5	WEARSHOE
44	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or ALS4-1032-130	INSERT
46	AN3-4A	BOLT
46	AN960JD10L	WASHER

00.08.28
CP 00.08.28

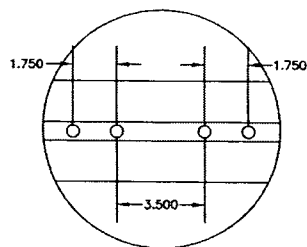
EFFECTIVE DEOS
98/12/14
DEO 9124
DED 9183

GENERAL NOTES:

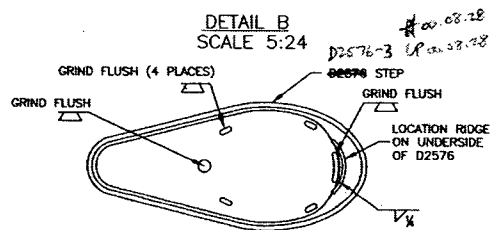
- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2500-1 EXTRUSION BEFORE BENDING = 190 INCHES *
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL $\varnothing 0.297$ HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (44 PLACES) AFTER FINISH. INSTALL AN3-4A BOLTS AND AN960JD10L WASHERS WITH SIKAFLEX-241.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 29472

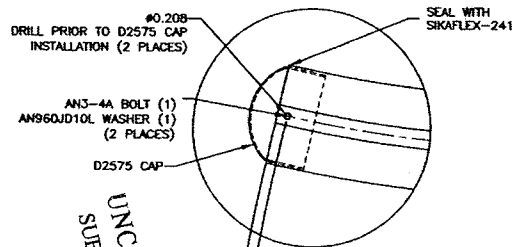
DETAIL A
SCALE 5:24



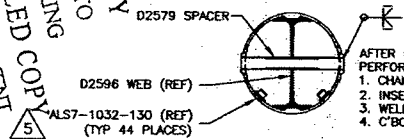
DETAIL B
SCALE 5:24



DETAIL C
SCALE 5:24

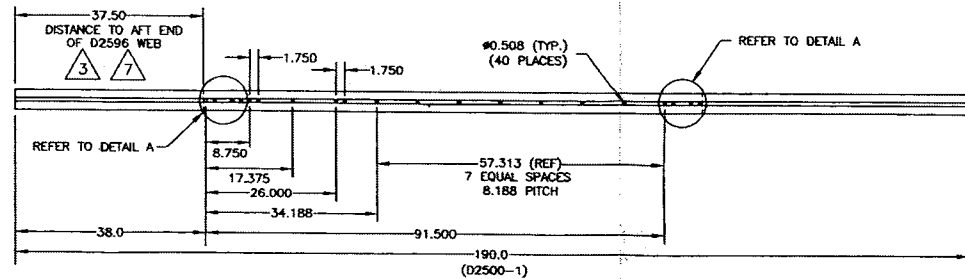


SECTION D-D
SCALE 5:24

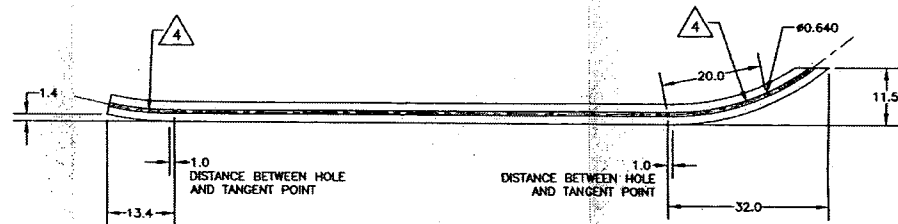


AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

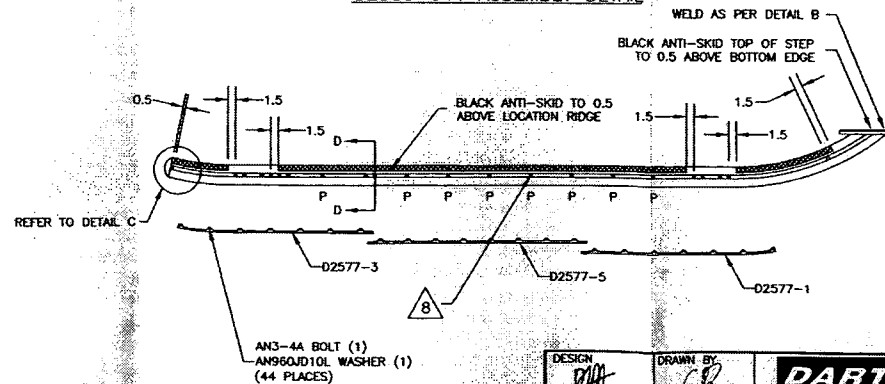
D2580-1 DRILLING DETAIL



D2580-1 BENDING AND CUTTING DETAIL

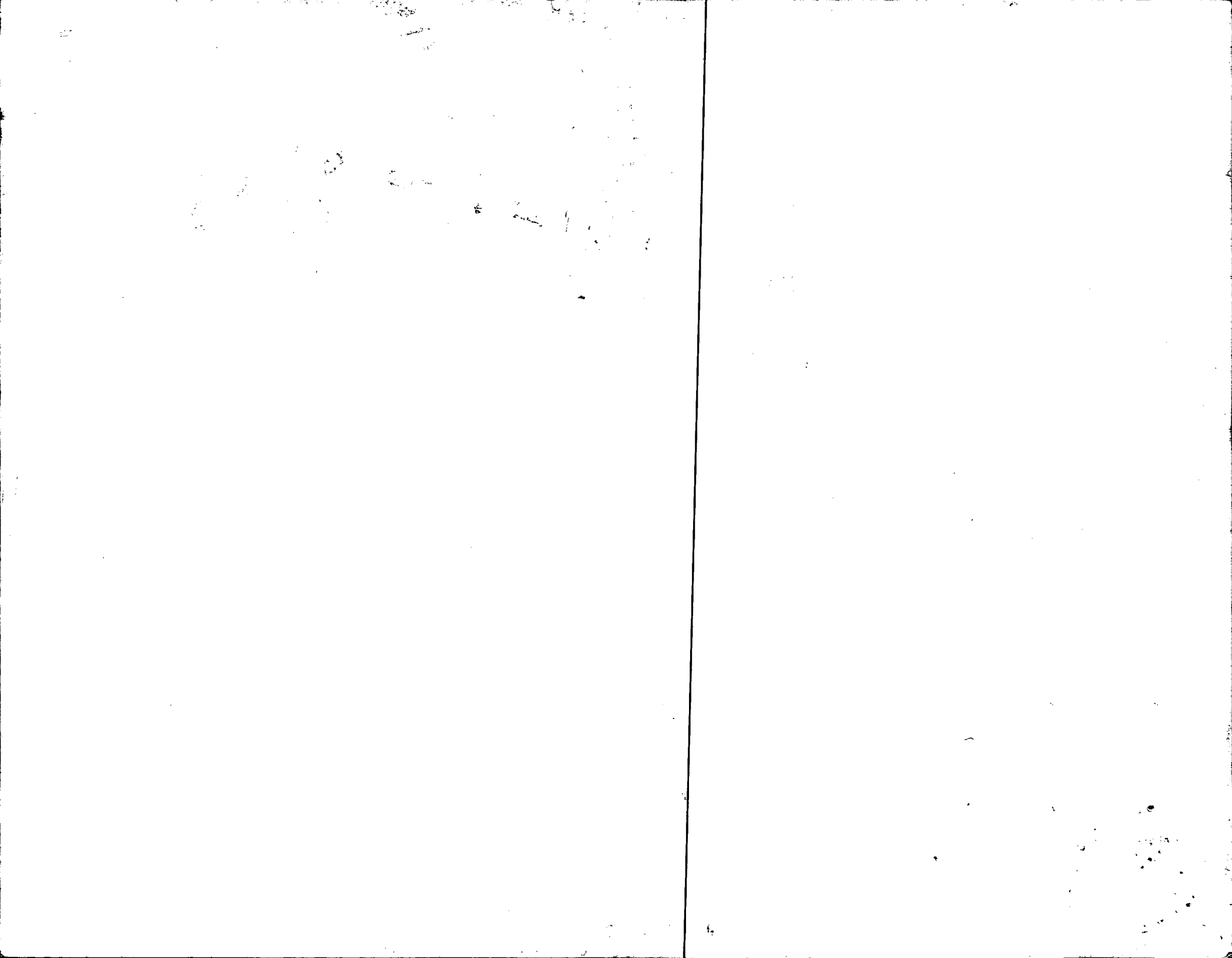


D2580-041 ASSEMBLY DETAIL



RELEASED
98/07/17 DS

DESIGN D2580	DRAWN BY CP	DART DART AEROSPACE LTD HAMPSHIRE, ONTARIO, CANADA	REV. C
CHECKED D2580	APPROVED DS	DRAWING NO. D2580	SHEET 2 OF 2
DATE 98.08.26		TITLE 205 SKIDTUBE ASSEMBLY	SCALE 1:24



NO. 80

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name Barclay Elliott
Joint Welding Procedure Tig
Part number and Job number A205 634 041 / B 29469 A

TEST WELDS REQUIRED

BASE METAL Alum WELDING PROCESS Tig
Penetration Complete ☐ Partial ☒ Single Weld ☒ Double Weld ☐
Current AC ☒ DC ☐ Backing YES ☐ NO ☒

	Position		Vertical Down <input type="checkbox"/> Up <input type="checkbox"/>	
Sheet Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	3G <input type="checkbox"/>	4G <input type="checkbox"/>
Tube Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	5G <input type="checkbox"/>	6G <input type="checkbox"/>
Sheet Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	3F <input type="checkbox"/>	4F <input type="checkbox"/>
Tube Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	4F <input type="checkbox"/>	5F <input type="checkbox"/>

Crossbolt Spacer Welded into Skidtube

TEST RESULTS

Visual Pass ☒ Fail ☐
Penetration Pass ☒ Fail ☐
Crossbolt Spacer Pass ☒ Fail ☐

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Date of Test Coupon 06/11/29 Qualifier David Wood